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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/552,094	Applicant(s) NAVARRO ET AL.
	Examiner Julianne N. Harvey	Art Unit 3733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 10 April 2009.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 32-47,112 and 115-144 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) 32-47,112,115-118,134-136 and 138-140 is/are allowed.
 6) Claim(s) 119-131,133,137 and 141-144 is/are rejected.
 7) Claim(s) 132 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 10 April 2009 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsman's Patent Drawing Review (PTO-646)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 10 Apr. 2009

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10 April 2009 has been entered.

Drawings

The drawings were received on 10 April 2009. These drawings are acceptable.

Claim Objections

The previous objection to claim 117 is withdrawn in view of Applicant's amendment of that claim.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to

identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claims 112, 117, and 118 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 32, 115, and 116. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). The only difference between claims 112 and 32 is that claim 32 recites a visco-elastic cushion whereas claim 112 recites a polymeric cushion. However, it appears that these terms are used interchangeably in Applicant's specification.

Claim 135 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 134. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). The only difference between claims 134 and 135 is that claim 134 recites a visco-elastic cushion whereas claim 135 recites a

polymeric cushion. However, it appears that these terms are used interchangeably in Applicant's specification.

Applicant is advised that should claim 119 be found allowable, claim 133 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). The only difference between the claims is that claim 119 recites a visco-elastic cushion whereas claim 133 recites a polymeric cushion. However, it appears that these terms are used interchangeably in Applicant's specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 137 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 32 recites that at least one side wall of each protrusion must be parallel to the internal surface of the visco-elastic cushion. The only

figures with such features contain ball-and-socket joints (Figs. 8-11 and 19). Fig. 25 does not appear to contain a ball-and-socket joint. However, in Fig. 25, the protrusion extending from the upper endplate does not have at least one side wall parallel to the internal surface of the visco-elastic cushion. Thus, claim 137 contains new matter.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 119-122, 127, 128, 133, and 141-144 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington (US 5,893,889 A) in view of Kuras (US 2004/0122517 A1).

Regarding **claim 119**, Harrington discloses an artificial intervertebral disc prosthesis having an anterior portion and a posterior portion comprising: a first endplate () having an upper surface and a lower relatively flat, uninterrupted surface; a second endplate () having an upper surface and a lower surface, wherein an axis perpendicular to the first endplate and the second endplate is a longitudinal axis; a projection () extending from the upper surface of the second endplate toward the first endplate, the projection being at least partially cylindrical and having at least one side wall () parallel to a longitudinal axis of the prosthesis, the projection terminating at a distal end () to form a gap between the distal end and the first endplate lower surface, the gap having a

predetermined dimension; and a visco-elastic cushion (68) interposed between the first and second endplates having a cavity for receiving the projection; wherein the distal end of the projection is substantially planar (Fig. 2). Regarding **claim 122**, Harrington discloses that the upper surface of the first endplate and the lower surface of the second endplate comprise appurtenances (38, 42) that aid in securing the prosthesis to adjacent vertebrae (Fig. 2). Harrington fails to disclose that the visco-elastic cushion is adhered to the endplates (**claim 119**), that the projection of the second endplate extends a distance of approximately 3mm to approximately 6mm from the upper surface of the second endplate to the distal end (**claim 120**), that the predetermined dimension of the gap is approximately 1mm to approximately 2mm (**claim 121**), that the first endplate and the second endplate comprise a biocompatible material (**claim 127**), and that the first endplate and the second endplate comprise materials selected from the group consisting of stainless steel, stainless steel alloys, titanium, titanium alloys, cobalt chromium molybdenum alloys, and composite materials (**claim 128**). Kuras teaches a disc prosthesis comprising first (120) and second (140) endplates and a visco-elastic member (160) interposed between and adhered to the first and second endplates (para. 0036 indicates that the member is adhered to the endplates) (Figs. 9 and 10). Kuras also teaches that the endplates are made of a biocompatible material, such as a titanium alloy (paras. 0031 and 0034). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Harrington prosthesis such that the member is adhered to the first and second endplates (**claim 119**), as suggested by Kuras, as adherence to the endplates prevents inadvertent displacement

of the member while still allowing the Harrington device to maintain its range of motion (compare Figs. 9 and 10 of Kuras). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the endplates from a biocompatible material (**claim 127**), such as a titanium alloy (**claim 128**), as suggested by Kuras, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the projection of the second endplate to extend a distance of approximately 3mm to approximately 6mm from the upper surface of the second endplate to the distal end (**claim 120**) and for the predetermined dimension of the gap to be approximately 1mm to approximately 2mm (**claim 121**), since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding **claim 133**, Harrington discloses an artificial intervertebral disc prosthesis having an anterior portion and a posterior portion comprising: a first endplate () having an upper surface and a lower relatively flat, uninterrupted surface; a second endplate () having an upper surface and a lower surface, wherein an axis perpendicular to the first endplate and the second endplate is a longitudinal axis; a projection () extending from the upper surface of the second endplate toward the first endplate, the projection being at least partially cylindrical and having at least one side wall () parallel to a longitudinal axis of the prosthesis, the projection terminating at a distal end () to

form a gap between the distal end and the first endplate lower surface, the gap having a predetermined dimension; and a cushion (68) interposed between the first and second endplates having a cavity for receiving the projection; wherein the distal end of the projection is substantially planar (Fig. 2). Harrington fails to disclose that the cushion is polymeric and is adhered to the endplates. Kuras teaches a disc prosthesis comprising first (120) and second (140) endplates and a polymeric member (160; para. 0036 indicates that the member is polymeric) interposed between and adhered to the first and second endplates (para. 0036 indicates that the member is adhered to the endplates) (Figs. 9 and 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Harrington prosthesis such that the member is polymeric and is adhered to the first and second endplates, as suggested by Kuras, as polymers are known to have shock absorbing capabilities and adherence to the endplates prevents inadvertent displacement of the member while still allowing the Harrington device to maintain its range of motion (compare Figs. 9 and 10 of Kuras).

Regarding **claim 141**, Harrington discloses an artificial intervertebral disc prosthesis comprising: a first endplate (32 and 54) having a first endplate first surface for engaging a vertebra and a first endplate second surface opposite the first endplate first surface; a second endplate (34) having a second endplate first surface for engaging a different vertebra and a second endplate second surface opposite the second endplate first surface; an annular member (68) having an upper surface and a lower surface and having a cavity defining a member internal space, the member interposed between the first endplate and the second endplate; a projection (45) extending from

the second endplate second surface into the member internal space having a distal end (46) closest to the first endplate second surface; and wherein the annular member contacts the second endplate at a contact layer lying in a contact layer surface plane (Fig. 2). Regarding **claim 142**, Harrington discloses a first plane that passes through a centroid of the first and second endplates and is located within the member internal space and intersects the contact layer surface plane at an intersection line (Fig. 2). Regarding **claim 143**, Harrington discloses that the distal end of the projection is situated closer to the first endplate second surface than is the intersection line (Fig. 2). Harrington fails to disclose that the member is polymeric and that the member is adhered to the second endplate at the contact layer surface plane (**claim 141**). Kuras teaches a disc prosthesis comprising first (120) and second (140) endplates and a polymeric member (160; para. 0036 indicates that it is polymeric) interposed between and adhered to the first and second endplates (para. 0036 indicates that the polymeric member is adhered to the endplates) (Figs. 9 and 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Harrington prosthesis such that the member is polymeric and adhered to the first and second endplates (**claim 141**), as suggested by Kuras, as polymers are known to have shock absorbing capabilities and adherence to the endplates prevents inadvertent displacement of the member while still allowing the Harrington device to maintain its range of motion (compare Figs. 9 and 10 of Kuras).

Regarding **claim 144**, Harrington discloses an artificial intervertebral disc prosthesis comprising: a first endplate (34) having a first endplate first surface for

engaging a vertebra and a first endplate second surface opposite the first endplate first surface; a second endplate (32 and 54) having a second endplate first surface for engaging a different vertebra and a second endplate second surface opposite the second endplate first surface; and an annular member (68) having an upper surface and a lower surface and having a cavity defining a member internal space, the member interposed between the first endplate and the second endplate; wherein each of the first endplate and the second endplate comprises a respective centroid and an axis intersecting the centroids is defined as a first axis; wherein a cross-sectional plane is defined containing the first axis; wherein in a section cut by the cross-sectional plane, on a left side there is a left contact interface line where the member contacts the first endplate second surface and a left imaginary extension line of the left contact interface line projecting inwardly into the member internal space; wherein in the cross-sectional plane on a right side there is a right contact interface line where the member contacts the first endplate second surface and a right imaginary extension line of the right contact interface line projecting inwardly into the member internal space; wherein the first endplate comprises a projection (45) extending from the first endplate across the left imaginary extension line or the right imaginary extension line into the member internal space (Fig. 2). Harrington fails to disclose that the member is a polymeric member. Kuras teaches a disc prosthesis comprising first (120) and second (140) endplates and a polymeric member (160; para. 0036 indicates that it is polymeric) interposed between the endplates (Figs. 9 and 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Harrington prosthesis such that the

member is polymeric, as suggested by Kuras, as polymers are known to have shock absorbing capabilities.

Claim 123 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington (US 5,893,889 A) in view of Kuras (US 2004/0122517 A1) as applied to claim 119 above, and further in view of Ishikawa et al. (US 6,447,448 B1). Harrington and Kuras teach the claimed invention except a force or pressure transducer located within the prosthesis for allowing the measurement and transmittal of information about loads experienced by the prosthesis. Ishikawa et al. teach an intervertebral disc containing a ball sensor (808 in Fig. 8) which is similar to the ball IC (col. 9, lines 56-57) that contains a force transducer (160 in 110 in Fig. 4A). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Harrington with a force transducer as suggested by Ishikawa et al. as doing so provides means to monitor stress and compression forces to assure proper alignment of the vertebrae and the development of forces due to vertebral degeneration and disc malfunction (col. 9, lines 54-61 of Ishikawa et al.).

Claims 124 and 125 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington (US 5,893,889 A) in view of Kuras (US 2004/0122517 A1) and Ishikawa et al. (US 6,447,448 B1) as applied to claim 123 above, and further in view of Kovacevic (US 5,197,488 A). Harrington, Kuras, and Ishikawa et al. teach the claimed invention except that the second projection houses at least a portion of a package of signal conditioning and amplification electronics connected to the transducer within the second projection and at other peripheral locations around the second endplate (**claim 124**) and

that the second projection houses electronics connected to the transducer within the second projection and at other peripheral locations around the second endplate (**claim 125**). Ishikawa et al. teach that the ball IC contains a processor (140 in Fig. 4A) which digitizes (i.e., conditions) the sensor data (col. 7, lines 34-35) and a transmitter (150 in Figs. 4A and 4B) that contains an amplifier (458 in Fig. 4B). Kovacevic teaches a device where the transducer is located on a plate positioned between the two endplates (14 positioned between 13 and 16 in Fig. 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Harrington with a processor and an amplifier (**claim 124**), as suggested by Ishikawa et al., as the processor digitizes the data to make it compatible with external data reception devices and the amplifier strengthens the data signal prior to signal output. It would have been further obvious to place such a package (the transducer, the processor, and the amplifier) within the second projection (**claims 124 and 125**) as doing so would protect the processor and amplifier from potential compression against the visco-elastic cushion (68 in Fig. 2 of Harrington) and allow the transducer to measure the pressure on the endplate without interference from the visco-elastic cushion. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place a transducer between the endplates (**claims 124 and 125**), as suggested by Kovacevic, as this would allow the measurement of the pressure on the visco-elastic cushion (68 in Fig. 2 of Harrington). It would have been further obvious to place this transducer on the surface of the second endplate (**claim 124 and 125**) as it would still be in contact with the visco-elastic cushion and could easily be connected to the

amplifier and processor located within the second projection, eliminating the need to include another amplifier and processor that could potentially be damaged from compression between the visco-elastic cushion and the second endplate.

Claim 126 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington (US 5,893,889 A) in view of Kuras (US 2004/0122517 A1) and Ishikawa et al. (US 6,447,448 B1) as applied to claim 123 above, and further in view of Wanderman et al. (US 5,511,561) and Medical Electronics Manufacturing (hereinafter referred to as "MEM"; Dorren, Sonny, *Designing Compact Medical Devices with Flex Circuitry*). Harrington, Kuras, and Ishikawa et al. teach the claimed invention except that the second endplate comprises a flex circuit that includes a load sensor embedded onto the upper surface of the second endplate. Wanderman et al. teach a flex circuit that includes a load sensor (col. 5, lines 8-11). MEM teaches that flex circuits can be used in implanted medical devices (last sentence of third paragraph). It would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Harrington with a flex circuit that includes a load sensor, as suggested by Wanderman et al. and MEM, as flex circuits reduce the size of the package of electronics and have lower assembly costs. It would have been further obvious to embed the flex circuit onto the surface of one of the endplates as that would allow the sensor to measure the load on the visco-elastic cushion. As such, embedding the flex circuit onto the surface of the second endplate is obvious as it is just a matter of individual preference whether the circuit is located on the surface of the first or second endplate as both locations would provide the same data.

Claim 129 is rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington (US 5,893,889 A) in view of Kuras (US 2004/0122517 A1) as applied to claim 127 above, and further in view of Kenna (US 4,714,469 A) and Wang et al. (US 4,714,468 A). Harrington and Kuras teach the claimed invention except that the endplates are made from an alloy containing approximately 66% cobalt, approximately 28% chromium, and approximately 6% molybdenum. Kenna teaches a disc device where the rigid body is made of Vitallium (col. 3, lines 59-63). Wang et al. teach that a typical Vitallium composition is 64.8% cobalt, 28% chromium, and 5.5% molybdenum (col. 1, lines 28-40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to make the endplates of Harrington device from Vitallium, as suggested by Kenna, as Vitallium has high corrosion resistance (col. 1, lines 28-30 of Wang et al.).

Claims 130 and 131 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrington (US 5,893,889 A) in view of Kuras (US 2004/0122517 A1) as applied to claim 119 above, and further in view of Steffee (US 5,071,437 A). Harrington and Kuras teach the claimed invention except that the posterior portion of each of the first and second endplates comprises a concavity that defines posterior lobes projecting from the posterior portions of each of the first and second endplates (**claim 130**) and that each of the first and second endplates has an external surface defining a generally "D" shape (**claim 131**). Steffee teaches a disc prosthesis that comprises first and second endplates (12, 14), both with a concave portion and posterior lobes (col. 4, lines 26-29; Figs. 2 and 3) such that the external surfaces of the endplates create a "D" shape (Figs.

2 and 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Harrington prosthesis such that the posterior portion of each endplate comprises a concave portion and posterior lobes (**claim 130**), as suggested by Steffee, resulting in "D"-shaped endplates (**claim 131**), as this configuration resembles that of a natural disc (col. 4, lines 26-32 of Steffee).

Allowable Subject Matter

Claims 32-47, 112, 115-118, 134-136 and 138-140 are allowed.

Claim 132 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 119 and 133 have been fully considered but they are not persuasive. Applicant argues that "no portion of Harrington's upper or lower endplate contains at least one side wall that is parallel to the longitudinal axis of the prosthesis" (page 24). The examiner respectfully disagrees. The frustoconical projection of endplate 34 contains a threaded post 45 located within a cavity of the projection. This cavity has a wall that is parallel to the longitudinal axis. The frustoconical projection 54 of endplate 32, 54 contains a cavity 55 that has a wall that is parallel to the longitudinal axis. Applicant also argues that Harrington does not disclose "a relatively flat, uninterrupted lower surface" (page 24). Applicant states that

openings in the surfaces constitute interruptions (pages 24-25). The examiner respectfully disagrees. If these openings were considered to be interruptions, then Applicant's own invention as shown in Applicant's figures also has interruptions. In that case, Applicant would not have support for claim 119.

Applicant's arguments with respect to claims 127-131 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to claim 141 have been fully considered but they are not persuasive. Applicant argues that "a frustoconical surface does not lie in a plane" (page 32). The examiner respectfully disagrees. Claim 141 does not require that the surface lie completely within a plane, which seems to be Applicant's narrower interpretation of the claim.

Applicant's arguments with respect to claim 144 have been fully considered but they are not persuasive. Applicant argues that "the projection of Harrington does not extend across either a left imaginary line extension of the left-most frustoconical section surface or a right imaginary line extension of the right-most frustoconical section surface" (page 33). The examiner respectfully disagrees. The examiner has interpreted post 45 as the projection that extends from the first endplate 34. If one were to extend the frustoconical surface of the first endplate 34, the imaginary line defining such an extension would cross the post 45.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julianna N. Harvey whose telephone number is 571-270-3815. The examiner can normally be reached on Mon. - Fri., 8:00 a.m. - 4:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eduardo Robert can be reached on 571-272-4719. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. N. H./
Examiner, Art Unit 3733
/Eduardo C. Robert/
Supervisory Patent Examiner, Art Unit 3733